

pension plan in the accompanying documents for this case, I did find its details in an economic loss report written by Craig L. Moore regarding the estate of Richard Gabrielle.² The “normal retirement plan” at Aon paid the average of the five highest-earning years in the 10 years prior to retirement times 2 percent times the number of years (up to 30 years). Thus, I assume Ms. Browne-Radburn would receive a pension equal to 40 percent of the average of her estimated salary in the 5 years leading to retirement.

In the few months she had worked at Aon prior to her death, Ms. Browne-Radburn had contributed 8 percent of her salary to a “Savings Plan” through Aon, much like a 401(k) savings plan. I assume she would have continued to contribute this percentage each year. The loss to her estate is the present value of what would have been left in this portfolio if Ms. Browne-Radburn withdrew 4 percent a year from this portfolio (a withdrawal rate widely considered the “gold standard” by financial planners), and the account continued to earn 4 percent per year in interest. I assume Ms. Browne-Radburn would have drawn down these savings in retirement each year so that she exhausted it in the year of her death.³

5. Income Taxes

A portion of Ms. Browne-Radburn earnings would have been taxed at the federal and state level. To estimate this tax liability, I use the TaxSim program, administered by the National Bureau of Economic Research (NBER).⁴

6. Personal Consumption

Ms. Browne-Radburn would have used a portion of her earnings and benefits for personal consumption. To estimate the portion of her income that would have gone to personal consumption, I use the Patton-Nelson tables, a widely referenced source to estimate the necessary consumption allowance to determine the portion of post-tax income that is to be included as a loss to the estimate.⁵ The Patton-Nelson method estimates the percent of income allocated to consumption by income, gender, and household size.

In addition, a portion of her earnings went to health care premiums. Based on my reading of the accompanying documents I have received, this amount would have been \$1203 in 2002. I assume these health care premiums would increase by 5 percent per year.

² Craig L. Moore. Economic Report Re: Estate of Richard Gabrielle. April 8, 2005. (received in May 2016 by Kreindler & Kreindler LLC).

³ Specifically, each year I assume she would withdraw a percentage of her remaining balance equal to the one divided by the number of years remaining in her life plus 1. Thus, at age 71, she withdraws $1/(80-71+1)=10\%$.

⁴ TaxSim takes as inputs taxable income, marital status, age, dependents, among others, and outputs federal, state, and FICA tax liabilities. For simplicity I assume the filer filed as “Single.”

⁵ Ruble, M.R., Patton, R.T. and Nelson, D.M., 2014. Patton-Nelson Personal Consumption Tables 2011-12. *J. Legal Econ.*, 21, p.41.

7. Lost Health Care for Ed Radburn

Ed Radburn received health care coverage through Ms. Browne-Radburn's position. To estimate this value to Ed, I assume he would have had to pay \$3,592 for health care coverage in 2002, which was the average Single Health Insurance Premium in New York in 2003,⁶ and that this amount increases by 5 percent each year thereafter.

8. Lost Value of Household Services

By the account of the report I have received, Ms. Browne-Radburn was an incredibly devoted partner and companion to her husband Ed. Not only did she cook meals and clean the house, but she also did all the accounting for both the household and Ed's business.

To estimate the value of these lost services, I have used the "Replacement Rate" method to estimate what Ed Radburn would have to pay to hire someone to provide these services. I estimate Ms. Browne-Radburn spent an average of 1.08 hours/day on cooking and cleaning, which is the average amount spent by women according to the 2014 American Time Use Survey (ATUS),⁷ and that the value of these services is \$15/hour. I estimate Ed Radburn would have to pay an accountant \$3500/year to do his business's accounting, which is roughly what a typical small business spent on accounting according to a 2015 survey.⁸ I assume Ms. Browne-Radburn would have provided these accounting services until retirement at age 70.

9. Discount Rates

An estimate of the present value of the loss to Ms. Browne-Radburn's estate must discount future income streams at an appropriate rate. As such, I have discounted all income beyond 2016 at an annual rate of 2 percent.

⁶ The Commonwealth Fund. 2012. State Trends in Premiums and Deductibles, 2003-2011: Eroding Protection and Rising Costs Underscore Need for Action.

http://www.commonwealthfund.org/~/media/files/publications/issue-brief/2012/dec/premiums/1648_schoen_state_trends_premiums_deductibles_2003_2011_1210.pdf (accessed September 2016).

⁷ <http://www.bls.gov/TUS/CHARTS/HOUSEHOLD.HTM>

⁸ <http://www.prnewswire.com/news-releases/new-infographic-the-burden-of-small-business-accounting-taxes-and-payroll-300026479.html> Among small businesses surveyed by SCORE in 2014, the mode respondent reported spending between \$1000 and \$5000 per year on accounting, and \$3,500 is the average of this range.

Table 1: Summary of Economic Damages to the estate of Bettina Browne-Radburn

| | |
|---|------------------|
| Present Value of Lost Earnings | 6,003,038 |
| Lost Health Care to Ed Radburn | 128,304 |
| Present Value of Lost Retirement Benefits | 744,000 |
| Present Value of Lost Household Services | 238,942 |
| Total | 7,114,283 |

Table 2: Present Value of Economic Damages

| Year | Age | Annual Salary | Annual Bonus | Annual consulting income from Omni | Total pre-tax earnings | Employee Health and Dental premiums | Taken out for Stock Investment Plan (401(k)) | Taxable Income | Taxes | Take Home Pay | Consumption | Net Loss | Present Value |
|------|-----|---------------|--------------|------------------------------------|------------------------|-------------------------------------|--|----------------|---------|---------------|-------------|----------|---------------|
| 2002 | 50 | 175,000 | 50,000 | 175,000 | 400,000 | 1,203 | 14,000 | 386,000 | 163,549 | 222,451 | 28,029 | 194,422 | 194,422 |
| 2003 | 51 | 182,000 | 52,000 | 182,000 | 416,000 | 1,263 | 14,560 | 401,440 | 162,214 | 239,226 | 30,142 | 209,083 | 209,083 |
| 2004 | 52 | 189,280 | 54,080 | 189,280 | 432,640 | 1,326 | 15,142 | 417,498 | 168,787 | 248,710 | 31,338 | 217,373 | 217,373 |
| 2005 | 53 | 196,851 | 56,243 | 196,851 | 449,946 | 1,393 | 15,748 | 434,198 | 175,772 | 258,425 | 32,562 | 225,864 | 225,864 |
| 2006 | 54 | 204,725 | 58,493 | 204,725 | 467,943 | 1,462 | 16,378 | 451,565 | 181,650 | 269,915 | 34,009 | 235,906 | 235,906 |
| 2007 | 55 | 212,914 | 60,833 | 212,914 | 486,661 | 1,535 | 17,033 | 469,628 | 188,971 | 280,657 | 35,363 | 245,295 | 245,295 |
| 2008 | 56 | 221,431 | 63,266 | 221,431 | 506,128 | 1,612 | 17,714 | 488,413 | 195,486 | 292,928 | 36,909 | 256,019 | 256,019 |
| 2009 | 57 | 230,288 | 65,797 | 230,288 | 526,373 | 1,693 | 18,423 | 507,950 | 204,625 | 303,325 | 38,219 | 265,106 | 265,106 |
| 2010 | 58 | 239,500 | 68,428 | 239,500 | 547,428 | 1,777 | 19,160 | 528,268 | 210,733 | 317,534 | 40,009 | 277,525 | 277,525 |
| 2011 | 59 | 249,080 | 71,166 | 249,080 | 569,325 | 1,866 | 19,926 | 549,398 | 217,490 | 331,908 | 41,820 | 290,088 | 290,088 |
| 2012 | 60 | 259,043 | 74,012 | 259,043 | 592,098 | 1,960 | 20,723 | 571,374 | 226,856 | 344,519 | 43,409 | 301,109 | 301,109 |
| 2013 | 61 | 269,404 | 76,973 | 269,404 | 615,782 | 2,058 | 21,552 | 594,229 | 255,052 | 339,178 | 42,736 | 296,441 | 296,441 |
| 2014 | 62 | 280,181 | 80,052 | 280,181 | 640,413 | 2,160 | 22,414 | 617,998 | 266,937 | 351,061 | 44,234 | 306,827 | 306,827 |
| 2015 | 63 | 291,388 | 83,254 | 291,388 | 666,029 | 2,268 | 23,311 | 642,718 | 279,299 | 363,419 | 45,791 | 317,629 | 317,629 |
| 2016 | 64 | 303,043 | 86,584 | 303,043 | 692,671 | 2,382 | 24,243 | 668,427 | 292,155 | 376,272 | 47,410 | 328,862 | 322,414 |
| 2017 | 65 | 315,165 | 90,047 | 315,165 | 720,377 | 2,501 | 25,213 | 695,164 | 305,525 | 389,639 | 49,095 | 340,545 | 327,321 |
| 2018 | 66 | 327,772 | 93,649 | 327,772 | 749,192 | 2,626 | 26,222 | 722,971 | 319,430 | 403,541 | 50,846 | 352,694 | 332,352 |
| 2019 | 67 | 340,883 | 97,395 | 340,883 | 779,160 | 2,757 | 27,271 | 751,890 | 333,891 | 417,998 | 52,668 | 365,331 | 337,509 |
| 2020 | 68 | 354,518 | 101,291 | 354,518 | 810,327 | 2,895 | 28,361 | 781,965 | 348,931 | 433,035 | 54,562 | 378,472 | 342,794 |
| 2021 | 69 | 368,699 | 105,342 | 368,699 | 842,740 | 3,040 | 29,496 | 813,244 | 364,572 | 448,672 | 56,533 | 392,139 | 348,208 |
| 2022 | 70 | 383,447 | 109,556 | 383,447 | 876,449 | 3,192 | 30,676 | 845,774 | 380,839 | 464,935 | 58,582 | 406,353 | 353,755 |

Total**6,003,038**

Table 3: Value of lost health care to Ed Radburn

| Year | Age | Amount Ed would pay for Health Care Coverage | Present value | Discount |
|------|-----|---|------------------|----------|
| 2002 | 50 | 3592 | 3592 | 0 |
| 2003 | 51 | 3772 | 3772 | 0 |
| 2004 | 52 | 3960 | 3960 | 0 |
| 2005 | 53 | 4158 | 4158 | 0 |
| 2006 | 54 | 4366 | 4366 | 0 |
| 2007 | 55 | 4584 | 4584 | 0 |
| 2008 | 56 | 4814 | 4814 | 0 |
| 2009 | 57 | 5054 | 5054 | 0 |
| 2010 | 58 | 5307 | 5307 | 0 |
| 2011 | 59 | 5572 | 5572 | 0 |
| 2012 | 60 | 5851 | 5851 | 0 |
| 2013 | 61 | 6144 | 6144 | 0 |
| 2014 | 62 | 6451 | 6451 | 0 |
| 2015 | 63 | 6773 | 6773 | 0 |
| 2016 | 64 | 7112 | 7112 | 1 |
| 2017 | 65 | 7468 | 7468 | 2 |
| 2018 | 66 | 7841 | 7841 | 3 |
| 2019 | 67 | 8233 | 8233 | 4 |
| 2020 | 68 | 8645 | 8645 | 5 |
| 2021 | 69 | 9077 | 9077 | 6 |
| 2022 | 70 | 9531 | 9531 | 7 |

Total **128303.6**

Table 4: Value of Contributions to Aon Savings Plan

| year | Age | Value of holdings |
|------|-----|-------------------|
| 2002 | 50 | 14560 |
| 2003 | 51 | 30285 |
| 2004 | 52 | 47244 |
| 2005 | 53 | 65512 |
| 2006 | 54 | 85166 |
| 2007 | 55 | 106287 |
| 2008 | 56 | 128961 |
| 2009 | 57 | 153280 |
| 2010 | 58 | 179337 |
| 2011 | 59 | 207234 |
| 2012 | 60 | 237076 |
| 2013 | 61 | 268973 |
| 2014 | 62 | 303043 |
| 2015 | 63 | 339409 |
| 2016 | 64 | 378198 |
| 2017 | 65 | 419548 |
| 2018 | 66 | 463600 |
| 2019 | 67 | 510506 |
| 2020 | 68 | 560422 |
| 2021 | 69 | 613514 |
| 2022 | 70 | 669958 |

Table 5: Present Value of Lost Retirement Benefits

| Year | Age | Value of SIP contributions | Annuity from SIP | Pension Benefit | Social Security | Taxes | Post-tax retirement income | Consumption | Net Loss | Present Value | Discount |
|------|-----|----------------------------|------------------|-----------------|-----------------|-------|----------------------------|-------------|----------|---------------|----------|
| 2023 | 71 | 669958 | 66996 | 71013 | 16092 | 49677 | 104424 | 18170 | 86254 | 75089 | 7 |
| 2024 | 72 | 627081 | 69676 | 71013 | 16092 | 50960 | 105820 | 18413 | 87407 | 74601 | 8 |
| 2025 | 73 | 579701 | 72463 | 71013 | 16092 | 52295 | 107272 | 18665 | 88607 | 74142 | 9 |
| 2026 | 74 | 527528 | 75361 | 71013 | 16092 | 53683 | 108783 | 18928 | 89855 | 73712 | 10 |
| 2027 | 75 | 470254 | 78376 | 71013 | 16092 | 55126 | 110354 | 18319 | 92035 | 74020 | 11 |
| 2028 | 76 | 407553 | 81511 | 71013 | 16092 | 56628 | 111988 | 18590 | 93398 | 73643 | 12 |
| 2029 | 77 | 339084 | 84771 | 71013 | 16092 | 58189 | 113687 | 18872 | 94815 | 73295 | 13 |
| 2030 | 78 | 264486 | 88162 | 71013 | 16092 | 58189 | 117078 | 19435 | 97643 | 74001 | 14 |
| 2031 | 79 | 183377 | 91688 | 71013 | 16092 | 58189 | 120604 | 19176 | 101428 | 75363 | 15 |
| 2032 | 80 | 95356 | 95356 | 71013 | 16092 | 58189 | 124272 | 19759 | 104513 | 76132 | 16 |

Total present value of lost retirement benefits

744000

Table 6 - Loss to Estimated Value of Household Services

| Year | Age | Hours spent cooking and cleaning | Value of household service | Accounting services for Ed | Total lost services | Present Value | Discount |
|--------------|-----|--|----------------------------------|----------------------------------|------------------------|------------------|----------|
| 2002 | 50 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2003 | 51 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2004 | 52 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2005 | 53 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2006 | 54 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2007 | 55 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2008 | 56 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2009 | 57 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2010 | 58 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2011 | 59 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2012 | 60 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2013 | 61 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2014 | 62 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2015 | 63 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9413 | 0 |
| 2016 | 64 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9228 | 1 |
| 2017 | 65 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 9047 | 2 |
| 2018 | 66 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 8870 | 3 |
| 2019 | 67 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 8696 | 4 |
| 2020 | 68 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 8526 | 5 |
| 2021 | 69 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 8358 | 6 |
| 2022 | 70 | 394.20 | 5,913.00 | 3,500.00 | 9,413.00 | 8195 | 7 |
| 2023 | 71 | 394.20 | 5,913.00 | | 5,913.00 | 5047 | 8 |
| 2024 | 72 | 394.20 | 5,913.00 | | 5,913.00 | 4948 | 9 |
| 2025 | 73 | 394.20 | 5,913.00 | | 5,913.00 | 4851 | 10 |
| 2026 | 74 | 394.20 | 5,913.00 | | 5,913.00 | 4756 | 11 |
| 2027 | 75 | 394.20 | 5,913.00 | | 5,913.00 | 4662 | 12 |
| 2028 | 76 | 394.20 | 5,913.00 | | 5,913.00 | 4571 | 13 |
| 2029 | 77 | 394.20 | 5,913.00 | | 5,913.00 | 4481 | 14 |
| 2030 | 78 | 394.20 | 5,913.00 | | 5,913.00 | 4393 | 15 |
| 2031 | 79 | 394.20 | 5,913.00 | | 5,913.00 | 4307 | 16 |
| 2032 | 80 | 394.20 | 5,913.00 | | 5,913.00 | 4223 | 17 |
| Total | | | | | 238942 | | |

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Ph.D., Economics, Boston University, Boston, MA, May 2016 (expected)

Dissertation Title: *Essays on Nonwage Compensation*

Dissertation Committee: Johannes Schmieder, Kevin Lang, David I. Levine

Visiting Ph.D. student, Harris School of Public Policy, University of Chicago, Chicago, IL, 2014-2015

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RESEARCH FIELDS

Labor Economics, Public Economics, Organizational Economics

RESEARCH GRANTS

2014-2015: The Effects of OSHA Enforcement: An Analysis of a Very Large Sample of Randomized Inspections.” Coalition for Evidence-Based Policy Low-Cost RCT Grant, \$100,000 (Co-PI with David I. Levine and Michael W. Toffel)

FELLOWSHIPS AND AWARDS

2015-2016: Pre-Doctoral Fellowship in Disability Policy, National Bureau of Economic Research

2014: Outstanding Paper Award, Alliance for Research on Corporate Sustainability (ARCS) Annual Conference

2014-2015: Funding for Research Assistant, RA Mentor Program, Boston University Department of Economics

2012: National Science Foundation Graduate Research Fellowship, Honorable Mention

2011-2016: Dean’s Fellowship, Boston University

2007: Distinction in General Scholarship, UC Berkeley

TEACHING EXPERIENCE

2012-2013: Teaching Fellow, Principles of Microeconomics, Department of Economics, Boston University

RESEARCH EXPERIENCE

2013-2014: Research Assistant for Professors Carola Frydman, Claudia Olivetti and Daniele Paserman, Boston University

2009-2011: Research Assistant for Professors Laura Alfaro, Fritz Foley, and Michael Toffel, Harvard Business School

2007-2009: Senior Research Assistant for Dr. Martin Baily, The Brookings Institution

PUBLICATIONS

Levine, David I., Michael W. Toffel, and Matthew S. Johnson. 2012. "Randomized Government Safety Inspections Reduce Worker Injuries with No Detectable Job Loss." *Science* 336, no. 6083.

Baily, Martin N., Robert E. Litan and Matthew S. Johnson. 2008. "The Origins of the Financial Crisis." The Brookings Institution; Fixing Finance Series: Paper 3.

Johnson, Matthew S. 2007. "The Power of Ideas and American Racial Struggles in the Early Nineteenth Century." *Clio's Scroll: Berkeley Undergraduate History Journal* (spring).

WORKING PAPERS

"Regulation by Shaming: Deterrence Effects of Publicizing Violations of Workplace Safety Laws."

OTHER PUBLICATIONS

Harvard Business School (HBS) Teaching Materials

Foley, C. Fritz, Matthew S. Johnson. "The Export-Import Bank of the United States." HBS Case 211-032.

Foley, C. Fritz and Matthew S. Johnson. "Belco Global Foods." HBS Case 211-033.

Alfaro, Laura, and Matthew Johnson. "Foreign Direct Investment and Ireland's Tiger Economy (B)." HBS Supplement 710-057.

Foley, C. Fritz, Michael Chen, Matthew Johnson, Linnea Meyer. "Noble Group." HBS Case 210-021.

Book Chapters

Alfaro, Laura and Matthew Johnson. 2012. "Foreign Direct Investment and Growth." Chap. 20 in *The Evidence and Impact of Financial Globalization*, edited by Gerard Caprio, 299–307. Elsevier.

CONFERENCES AND PRESENTATIONS

2016: Strategy and the Business Environment Annual Conference

2015: Southern Economic Association Annual Meeting

2014: Society of Labor Economists (SOLE) Annual Meeting; Alliance for Research in Corporate Sustainability (ARCS) Annual Meeting; Washington University Economics Graduate Student Conference; White House Office of Science and Technology Policy

2013: Harvard School of Public Health ERC Seminar

2012: Association for Public Policy and Management Fall Research Conference, Baltimore MD

COMPUTER SKILLS: STATA, LaTeX, R

OTHER EXPERIENCE

2014-2015: BU Labor Reading Group founder/organizer; 2013-2014: BU Graduate Economics Association Officer; 2012-2015: Volunteer Tutor with Tutoring Plus! (2012-2015)

Yvonne Kennedy

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Analysis of Economic Loss in the Matter of
Estate of Yvonne Kennedy

September 2016

To Whom It May Concern,

I have been retained by Kreindler & Kreindler LLP to provide an estimate of the economic losses to the estate of Yvonne Kennedy as a result of her death in the terrorist attacks of September 11, 2001. The attached report provides the details of my analysis.

I have attached my Curriculum Vitae that describes my qualifications to undertake this report.

Matthew S. Johnson

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1. Introduction

Yvonne Kennedy was born on June 26, 1939, and she was 62 years old when she was killed in the terrorist attacks of September 11, 2001. She was survived by her two sons Leigh and Simon Kennedy.

This report provides the details behind an estimate of the economic loss to the estate of Ms. Kennedy as a result of her death.

2. Life Expectancy

I have assumed Ms. Kennedy would live until age 84, the average life expectancy for a Caucasian woman aged 62 as of 2002.¹

3. Earnings Loss

Even though Ms. Kennedy was retired, she worked as a volunteer for the Red Cross, a position for which her 2001 tax returns show she received compensation. In 2001 she received \$14,918. If this payment was for January-August, I infer her annual salary would be \$22,377. The documents I have received suggest Ms. Kennedy was passionate about her work with the Red Cross, and that she was in excellent health. Thus, I assume she would continue working in this position until the year prior to her death. Additionally, I assume her earnings would increase at a rate of 2 percent per year.

The tax return indicates \$2807 in tax was withheld from Ms. Kennedy's earnings. I thus assume this income is taxed at a rate of $(2807/14918=)$ 19%.

4. Pension benefits

According to Ms. Kennedy's 2001 tax return, she received a pension from the Australian government. She received \$5064 in 2001, which the tax return indicates was for the months January-June of 2001. I thus infer her annual pension would be $(5064*2=)$ \$10,128. The tax return shows no taxes were withheld from this pension benefit, so I assume no tax is withheld.

5. Personal Consumption

¹ National Vital Statistics Reports. United States Life Tables, 2002. Volume 53, No. 6, November 10, 2004.

Ms. Kennedy would have used a portion of her earnings and benefits for personal consumption. To estimate the portion of her income that would have gone to personal consumption, I use the Patton-Nelson tables, a widely referenced source to estimate the necessary consumption allowance to determine the portion of post-tax income that is to be included as a loss to the estimate.² The Patton-Nelson method estimates the percent of income allocated to consumption by income, gender, and household size. While Ms. Kennedy lived alone at the time of her death, the report I have received makes evident how much she supported her two sons, both financially and emotionally. Thus, for the purposes of estimating her consumption percentage, I use the consumption percentage corresponding to a female making \$30,000 living in 3-person household, which is 26.6 percent.

6. Discount Rates

An estimate of the present value of the loss to Ms. Kennedy's estate must discount future income streams at an appropriate rate. As such, I have discounted all income beyond 2016 at an annual rate of 2 percent.

² Ruble, M.R., Patton, R.T. and Nelson, D.M., 2014. Patton-Nelson Personal Consumption Tables 2011-12. *J. Legal Econ.*, 21, p.41.

**Table 1: Summary of Economic Damages to the Estate Of
Yvonne Kennedy**

| | |
|--|----------------|
| Present Value of Lost Earnings and Pension Benefits | 499,834 |
| Total | 499,834 |

Table 4: Present Value of Lost Earnings and Pension Benefits

| Year | Age | Red Cross Earnings | Australian pension | Taxes on earnings | Post-tax retirement income | Consumption | Net Loss | Present Value | Discount |
|--------------|-----|--------------------|--------------------|-------------------|----------------------------|-------------|---------------|---------------|----------|
| 2002 | 63 | 22377 | 10128 | 4211 | 28295 | 7357 | 20938 | 20938 | 0 |
| 2003 | 64 | 22825 | 10128 | 4295 | 28658 | 7451 | 21207 | 21207 | 0 |
| 2004 | 65 | 23281 | 10128 | 4381 | 29028 | 7547 | 21481 | 21481 | 0 |
| 2005 | 66 | 23747 | 10128 | 4468 | 29406 | 7646 | 21761 | 21761 | 0 |
| 2006 | 67 | 24222 | 10128 | 4558 | 29792 | 7746 | 22046 | 22046 | 0 |
| 2007 | 68 | 24706 | 10128 | 4649 | 30185 | 7848 | 22337 | 22337 | 0 |
| 2008 | 69 | 25200 | 10128 | 4742 | 30586 | 7952 | 22634 | 22634 | 0 |
| 2009 | 70 | 25704 | 10128 | 4837 | 30996 | 8059 | 22937 | 22937 | 0 |
| 2010 | 71 | 26218 | 10128 | 4933 | 31413 | 8167 | 23246 | 23246 | 0 |
| 2011 | 72 | 26743 | 10128 | 5032 | 31839 | 8278 | 23561 | 23561 | 0 |
| 2012 | 73 | 27277 | 10128 | 5133 | 32273 | 8391 | 23882 | 23882 | 0 |
| 2013 | 74 | 27823 | 10128 | 5235 | 32716 | 8506 | 24210 | 24210 | 0 |
| 2014 | 75 | 28379 | 10128 | 5340 | 33168 | 8624 | 24544 | 24544 | 0 |
| 2015 | 76 | 28947 | 10128 | 5447 | 33628 | 8743 | 24885 | 24885 | 0 |
| 2016 | 77 | 29526 | 10128 | 5556 | 34098 | 8866 | 25233 | 25233 | 0 |
| 2017 | 78 | 30116 | 10128 | 5667 | 34578 | 8990 | 25588 | 25588 | 1 |
| 2018 | 79 | 30719 | 10128 | 5780 | 35067 | 9117 | 25949 | 25949 | 2 |
| 2019 | 80 | 31333 | 10128 | 5896 | 35565 | 9247 | 26318 | 26318 | 3 |
| 2020 | 81 | 31960 | 10128 | 6014 | 36074 | 9379 | 26695 | 26695 | 4 |
| 2021 | 82 | 32599 | 10128 | 6134 | 36593 | 9514 | 27079 | 27079 | 5 |
| 2022 | 83 | 33251 | 10128 | 6257 | 37122 | 9652 | 27471 | 27471 | 6 |
| 2023 | 84 | | 10128 | 10128 | 2633 | 7495 | 6525 | 6525 | 7 |
| Total | | | | | | | 499834 | | |

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2012: National Science Foundation Graduate Research Fellowship, Honorable Mention
2011-2016: Dean's Fellowship, Boston University
2007: Distinction in General Scholarship, UC Berkeley

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2013-2014: Research Assistant for Professors Carola Frydman, Claudia Olivetti and Daniele Paserman, Boston University
2009-2011: Research Assistant for Professors Laura Alfaro, Fritz Foley, and Michael Toffel, Harvard Business School
2007-2009: Senior Research Assistant for Dr. Martin Baily, The Brookings Institution

PUBLICATIONS

Levine, David I., Michael W. Toffel, and Matthew S. Johnson. 2012. "Randomized Government Safety Inspections Reduce Worker Injuries with No Detectable Job Loss." *Science* 336, no. 6083.

Baily, Martin N., Robert E. Litan and Matthew S. Johnson. 2008. "The Origins of the Financial Crisis." The Brookings Institution; Fixing Finance Series: Paper 3.

Johnson, Matthew S. 2007. "The Power of Ideas and American Racial Struggles in the Early Nineteenth Century." *Clio's Scroll: Berkeley Undergraduate History Journal* (spring).

WORKING PAPERS

"Regulation by Shaming: Deterrence Effects of Publicizing Violations of Workplace Safety Laws."

OTHER PUBLICATIONS

Harvard Business School (HBS) Teaching Materials

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Book Chapters

Alfaro, Laura and Matthew Johnson. 2012. "Foreign Direct Investment and Growth." Chap. 20 in *The Evidence and Impact of Financial Globalization*, edited by Gerard Caprio, 299–307. Elsevier.

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2013: Harvard School of Public Health ERC Seminar

2012: Association for Public Policy and Management Fall Research Conference, Baltimore MD

COMPUTER SKILLS: STATA, LaTeX, R

OTHER EXPERIENCE

2014-2015: BU Labor Reading Group founder/organizer; 2013-2014: BU Graduate Economics Association Officer; 2012-2015: Volunteer Tutor with Tutoring Plus! (2012-2015)

Ruben Ornedo

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Analysis of Economic Loss in the Matter of
Estate of Ruben Ornedo

October 2016

To Whom It May Concern,

I have been retained by Kreindler & Kreindler LLP to provide an estimate of the economic losses to the estate of Ruben Ornedo following his death in the terrorist attacks of September 11, 2001. In the documents I have been given, however, I received a report written by Craig L. Moore, dated November 22, 2003, which already conducted an estimate of the economic loss to Mr. Ornedo's estate. Thus, rather than create a new report, I am bringing the estimate provided by Mr. Moore to present value as of 2016. The attached report provides the details of my analysis.

I have attached my Curriculum Vitae that describes my qualifications to undertake this report.

Matthew S. Johnson

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1. Introduction

Ruben Ornedo was killed in the terrorist attacks of September 11, 2001. This is a report to bring to present value (as of October 2016) an estimate of the economic loss to the estate of Mr. Ornedo as a result of his death. This estimate was conducted by Kevin L. Moore, in a report dated November 22, 2003.

2. Details of the update

The report I have received written by Kevin L. Moore included information about Mr. Ornedo's earnings at the time of his death, Mr. Moore's formula's for calculating the estimated value of his fringe benefits and lost household services, and various parameters such as the assumed tax rate Mr. Ornedo would face, the percent of his income that would be allocated to personal consumption, and the discount rate to discount future income to present value. One parameter not included in the report was the assumed growth rate of Mr. Ornedo's earnings, but I was able to infer it based on his 2001 earnings and Mr. Moore's calculated total estimated present value of lost earnings in the report. The rate I inferred was a 4.9 percent annual increase in earnings and benefits.

The attached tables include the details of my analysis.

**Table 1: Summary of Economic Damages to the estate of
Ruben Ornedo**

| | work until age | |
|---|------------------|------------------|
| | 65 | 67 |
| Present Value of Lost Earnings and employee benefits | 3,594,694 | 3,905,948 |
| Present Value of Lost Household Services | 142,895 | 142895 |
| Total | 3,737,589 | 4,048,842 |

Table 2: Present Value of Lost Earnings
Year **Age** **Annual Salary** **Fringe benefits** **Total pre-tax earnings** **Taxes** **Take Home Pay** **Consumption** **Net Loss** **Present Value** **Discount**
 40 110,683 6,827 117,510 25,382 92,128 6,173 85,956 85,956 0

| Year | Age | Annual Salary | Fringe benefits | Total pre-tax earnings | Taxes | Take Home Pay | Consumption | Net Loss | Present Value | Discount |
|------|-----|---------------|-----------------|------------------------|--------|---------------|-------------|----------|---------------|----------|
| 2002 | 40 | 110,683 | 6,827 | 117,510 | 25,382 | 92,128 | 6,173 | 85,956 | 85,956 | 0 |
| 2003 | 41 | 116,106 | 7,162 | 123,268 | 26,626 | 96,642 | 6,475 | 90,167 | 90,167 | 0 |
| 2004 | 42 | 121,796 | 7,513 | 129,308 | 27,931 | 101,378 | 6,792 | 94,586 | 94,586 | 0 |
| 2005 | 43 | 127,764 | 7,881 | 135,645 | 29,299 | 106,345 | 7,125 | 99,220 | 99,220 | 0 |
| 2006 | 44 | 134,024 | 8,267 | 142,291 | 30,735 | 111,556 | 7,474 | 104,082 | 104,082 | 0 |
| 2007 | 45 | 140,591 | 8,672 | 149,263 | 32,241 | 117,023 | 7,841 | 109,182 | 109,182 | 0 |
| 2008 | 46 | 147,480 | 9,097 | 156,577 | 33,821 | 122,757 | 8,225 | 114,532 | 114,532 | 0 |
| 2009 | 47 | 154,707 | 9,543 | 164,250 | 35,478 | 128,772 | 8,628 | 120,144 | 120,144 | 0 |
| 2010 | 48 | 162,287 | 10,010 | 172,298 | 37,216 | 135,082 | 9,050 | 126,031 | 126,031 | 0 |
| 2011 | 49 | 170,239 | 10,501 | 180,740 | 39,040 | 141,701 | 9,494 | 132,207 | 132,207 | 0 |
| 2012 | 50 | 178,581 | 11,016 | 189,597 | 40,953 | 148,644 | 9,959 | 138,685 | 138,685 | 0 |
| 2013 | 51 | 187,332 | 11,555 | 198,887 | 42,960 | 155,927 | 10,447 | 145,480 | 145,480 | 0 |
| 2014 | 52 | 196,511 | 12,121 | 208,632 | 45,065 | 163,568 | 10,959 | 152,609 | 152,609 | 0 |
| 2015 | 53 | 206,140 | 12,715 | 218,855 | 47,273 | 171,583 | 11,496 | 160,087 | 160,087 | 0 |
| 2016 | 54 | 216,241 | 13,339 | 229,579 | 49,589 | 179,990 | 12,059 | 167,931 | 167,931 | 0 |
| 2017 | 55 | 226,837 | 13,992 | 240,829 | 52,019 | 188,810 | 12,650 | 176,159 | 176,159 | 1 |
| 2018 | 56 | 237,952 | 14,678 | 252,629 | 54,568 | 198,061 | 13,270 | 184,791 | 184,791 | 2 |
| 2019 | 57 | 249,611 | 15,397 | 265,008 | 57,242 | 207,766 | 13,920 | 193,846 | 193,846 | 3 |
| 2020 | 58 | 261,842 | 16,151 | 277,994 | 60,047 | 217,947 | 27,243 | 190,704 | 190,704 | 4 |
| 2021 | 59 | 274,673 | 16,943 | 291,615 | 62,989 | 228,626 | 28,578 | 200,048 | 156,743 | 5 |
| 2022 | 60 | 288,131 | 17,773 | 305,904 | 66,075 | 239,829 | 29,979 | 209,850 | 156,594 | 6 |
| 2023 | 61 | 302,250 | 18,644 | 320,894 | 69,313 | 251,581 | 31,448 | 220,133 | 156,444 | 7 |
| 2024 | 62 | 317,060 | 19,557 | 336,618 | 72,709 | 263,908 | 32,989 | 230,920 | 156,295 | 8 |
| 2025 | 63 | 332,596 | 20,516 | 353,112 | 76,272 | 276,840 | 34,605 | 242,235 | 156,147 | 9 |
| 2026 | 64 | 348,893 | 21,521 | 370,414 | 80,009 | 290,405 | 36,301 | 254,104 | 155,998 | 10 |
| 2027 | 65 | 365,989 | 22,576 | 388,565 | 83,930 | 304,635 | 38,079 | 266,555 | 155,849 | 11 |
| 2028 | 66 | 383,923 | 23,682 | 407,604 | 88,043 | 319,562 | 39,945 | 279,617 | 155,701 | 12 |
| 2029 | 67 | 402,735 | 24,842 | 427,577 | 92,357 | 335,220 | 41,903 | 293,318 | 155,553 | 13 |

Total if work to age 65
 Total if work to age 67

3,594,694
 3,905,948

Table 4 - Loss to Estimated Value of Household Services

| Year | Age | Child's age | Hours/year | Value of household service | Present Value | Discount |
|--------------|-----|-------------|------------|----------------------------|---------------|----------|
| 2002 | 40 | 4 | 432 | 6,480 | 6480 | 0 |
| 2003 | 41 | 5 | 432 | 6,480 | 6480 | 0 |
| 2004 | 42 | 6 | 337 | 5,055 | 5055 | 0 |
| 2005 | 43 | 7 | 337 | 5,055 | 5055 | 0 |
| 2006 | 44 | 8 | 337 | 5,055 | 5055 | 0 |
| 2007 | 45 | 9 | 337 | 5,055 | 5055 | 0 |
| 2008 | 46 | 10 | 337 | 5,055 | 5055 | 0 |
| 2009 | 47 | 11 | 337 | 5,055 | 5055 | 0 |
| 2010 | 48 | 12 | 336 | 5,040 | 5040 | 0 |
| 2011 | 49 | 13 | 336 | 5,040 | 5040 | 0 |
| 2012 | 50 | 14 | 336 | 5,040 | 5040 | 0 |
| 2013 | 51 | 15 | 336 | 5,040 | 5040 | 0 |
| 2014 | 52 | 16 | 336 | 5,040 | 5040 | 0 |
| 2015 | 53 | 17 | 336 | 5,040 | 5040 | 0 |
| 2016 | 54 | 18 | 336 | 5,040 | 5040 | 0 |
| 2017 | 55 | | 336 | 5,040 | 4851 | 1 |
| 2018 | 56 | | 336 | 5,040 | 4669 | 2 |
| 2019 | 57 | | 336 | 5,040 | 4493 | 3 |
| 2020 | 58 | | 336 | 5,040 | 4325 | 4 |
| 2021 | 59 | | 336 | 5,040 | 4162 | 5 |
| 2022 | 60 | | 336 | 5,040 | 4006 | 6 |
| 2023 | 61 | | 336 | 5,040 | 3856 | 7 |
| 2024 | 62 | | 336 | 5,040 | 3711 | 8 |
| 2025 | 63 | | 336 | 5,040 | 3572 | 9 |
| 2026 | 64 | | 336 | 5,040 | 3438 | 10 |
| 2027 | 65 | | 336 | 5,040 | 3309 | 11 |
| 2028 | 66 | | 336 | 5,040 | 3185 | 12 |
| 2029 | 67 | | 336 | 5,040 | 3065 | 13 |
| 2030 | 68 | | 336 | 5,040 | 2950 | 14 |
| 2031 | 69 | | 336 | 5,040 | 2839 | 15 |
| 2032 | 70 | | 336 | 5,040 | 2733 | 16 |
| 2033 | 71 | | 336 | 5,040 | 2630 | 17 |
| 2034 | 72 | | 336 | 5,040 | 2531 | 18 |
| Total | | | | | 142895 | |

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Dissertation Committee: Johannes Schmieder, Kevin Lang, David I. Levine

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Analysis of Economic Loss in the Matter of
Estate of Horace R. Passananti

September 2016

To Whom It May Concern,

I have been retained by Kreindler & Kreindler LLP to provide an estimate of the economic losses to the estate of Horace R. Passananti following his death in the terrorist attacks of September 11, 2001. The attached report provides the details of my analysis.

I have attached my Curriculum Vitae that describes my qualifications to undertake this report.

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1. Introduction

Horace R. Passananti was born on September 24, 1945, and he was 55 years old when he was killed in the terrorist attacks of September 11, 2001. He was survived by two children Sean (age 32) and Michael (age 28).

This report provides the details behind an estimate of the economic loss to the estate of Mr. Passananti as a result of his death.

2. Retirement and Life Expectancy

I have assumed Mr. Passananti would work until the age of 65, and that he would live until age 78, the average life expectancy of a male aged 55 as of 2002.¹

3. Earnings Loss

At the time of his death, Horace Passananti was an Associate Corporate Claims Manager with Marsh Inc, a position he had held since September 1998. I have assumed that Mr. Passananti would have continued at Marsh until his retirement.

My estimate of the lost earnings to Mr. Passananti's estate is based on the documents I have received from Kreindler & Kreindler LLP. At the time of his death, Mr. Passananti's salary was \$87,000, and I assume his salary would have increased at an annual rate of 3.2% through retirement, which is the average annual increase in his salary over the 4 years prior to his death.

4. Retirement Benefits

Through his position at Marsh, Mr. Passananti would have received a traditional pension, which according to the documents I have received would have paid an estimated \$26,080 per year after retirement.

Additionally, Marsh offered other retirement benefits which, based on his history, I assume Mr. Passananti would have taken advantage of. First, Marsh offered a Stock Investment Plan (a 401(k) type plan) in which employees made pre-tax contributions, and Marsh matched contributions up to 6% of the employee's salary. Mr. Passananti contributed \$7,400 to his SIP in 2000, and was on track for a similar annual contribution in 2001. I assume Mr. Passananti's contributions would have increased each year by 3.2 percent (the same rate I have assumed his salary would increase), and I assume this

¹ National Vital Statistics Reports. United States Life Tables, 2002. Volume 53, No. 6, November 10, 2004.

401(k) would have achieved an annual rate of return of 4 percent, which is in line with predictions of many financial experts as of 2014.²

Additionally, Marsh offered a Stock Purchase Plan (SPP) in which employees could purchase Marsh and McClellan Companies (MMC) stock at a discount. The plan essentially allows employees to buy MMC stock at a 15 percent discount of whichever is lower between the stock price the first and last day of the plan year. Before making the purchase, any contributions the employee makes to the SPP receive interest at a rate of 5 percent. In 2000 and 2001, Mr. Passananti contributed 4 percent of his salary to the SPP, and I assume he would have continued to do so through retirement. To estimate the accumulated value of Mr. Passananti's SPP contributions, I combine the formula underlying this benefit with data on MMC's historical stock prices.

To calculate the loss to the estate accruing from the lost SIP and SPP contributions, I assume Mr. Passananti would have drawn down these savings in retirement each year so that he exhausted it in the year of his death.³

5. Income Taxes

A portion of Mr. Passananti's earnings would have been taxed at the federal and state level and for FICA. To estimate this tax liability, I use the TaxSim program, administered by the National Bureau of Economic Research (NBER).⁴

6. Personal Consumption

Mr. Passananti would have used a portion of his earnings and benefits for personal consumption. To estimate the portion of Mr. Passananti income that would have gone to personal consumption, I use the Patton-Nelson tables, a widely referenced source to estimate the necessary consumption allowance to determine the portion of post-tax income that is to be included as a loss to the estimate.⁵

7. Discount Rates

An estimate of the present value of the loss to Mr. Passananti's estate must discount future income streams at an appropriate rate. As such, I have discounted all income beyond 2016 at an annual rate of 2 percent.

² Ruth Davis Konigsberg, 2014. "Why Your 401(k) May Only Return 4%." Time.com <http://time.com/money/3247321/retirement-401k-no-more-10-returns/> (accessed 9/5/2016)

³ Specifically, each year I assume he would withdraw a percentage of his remaining balance equal to the one divided by the number of years remaining in his life plus 1. Thus, at age 66, he withdraws $1/(77-66+1)=8.3\%$.

⁴ TaxSim takes as inputs taxable income, marital status, age, dependents, among others, and outputs federal, state, and FICA tax liabilities. For simplicity I assume the filer filed as "Single."

⁵ Ruble, M.R., Patton, R.T. and Nelson, D.M., 2014. Patton-Nelson Personal Consumption Tables 2011-12. *J. Legal Econ.*, 21, p.41.

**Table 1: Summary of Economic Damages to the
estate of Horace Passananti**

| | |
|--|----------------|
| Present Value of Lost Earnings | 159,936 |
| Present Value of Lost Retirement Benefits | 468,466 |
| Total | 628,402 |

Table 2: Present Value of Lost Earnings
Year Age Annual Salary Taken out for Stock Investment Plan Taken out for health and dental Taxable Income Taken out for Stock Purchase Plan Taxes Take Home Pay Consumption Net Loss Present Value Discount

| Year | Age | Annual Salary | Taken out for Stock Investment Plan | Taken out for health and dental | Taxable Income | Taken out for Stock Purchase Plan | Taxes | Take Home Pay | Consumption | Net Loss | Present Value | Discount |
|------|-----|---------------|-------------------------------------|---------------------------------|----------------|-----------------------------------|--------|---------------|-------------|----------|---------------|----------|
| 2002 | 56 | 87,000 | 7,400 | 2,989 | 76,611 | 3,480 | 29,400 | 43,731 | 31,530 | 12,201 | 12,201 | 0 |
| 2003 | 57 | 89,784 | 7,637 | 3,138 | 79,009 | 3,591 | 29,616 | 45,802 | 33,023 | 12,779 | 12,779 | 0 |
| 2004 | 58 | 92,657 | 7,881 | 3,295 | 81,481 | 3,706 | 30,683 | 47,092 | 33,953 | 13,139 | 13,139 | 0 |
| 2005 | 59 | 95,622 | 8,133 | 3,460 | 84,029 | 3,825 | 31,758 | 48,446 | 34,930 | 13,516 | 13,516 | 0 |
| 2006 | 60 | 98,682 | 8,394 | 3,633 | 86,655 | 3,947 | 32,787 | 49,921 | 35,993 | 13,928 | 13,928 | 0 |
| 2007 | 61 | 101,840 | 8,662 | 3,815 | 89,363 | 4,074 | 33,857 | 51,432 | 33,739 | 17,693 | 17,693 | 0 |
| 2008 | 62 | 105,099 | 8,939 | 4,006 | 92,154 | 4,204 | 35,055 | 52,895 | 34,699 | 18,196 | 18,196 | 0 |
| 2009 | 63 | 108,462 | 9,225 | 4,206 | 95,031 | 4,338 | 36,114 | 54,578 | 35,803 | 18,775 | 18,775 | 0 |
| 2010 | 64 | 111,933 | 9,521 | 4,416 | 97,996 | 4,477 | 37,576 | 55,943 | 36,698 | 19,244 | 19,244 | 0 |
| 2011 | 65 | 115,515 | 9,825 | 4,637 | 101,052 | 4,621 | 36,939 | 59,493 | 39,027 | 20,466 | 20,466 | 0 |

159,936

Total

Table 5: Value of Contributions to Marsh Stock Purchase Plan

| year | Age | Contributed by employee | Value of contributions after interest | Annual growth in Marsh stock | Value of contributions after stock purchase | Accumulated value at end of year |
|------|-----|-------------------------|---------------------------------------|------------------------------|---|----------------------------------|
| 2002 | 56 | 3,480 | 3,654 | -10.43% | 4298.82 | 4299 |
| 2003 | 57 | 3,591 | 3,771 | 12.48% | 4990.03 | 9825 |
| 2004 | 58 | 3,706 | 3,892 | -4.21% | 4578.35 | 13990 |
| 2005 | 59 | 3,825 | 4,016 | -44.43% | 4724.86 | 12498 |
| 2006 | 60 | 3,947 | 4,145 | 23.60% | 6026.92 | 21475 |
| 2007 | 61 | 4,074 | 4,277 | -22.68% | 5032.09 | 21637 |
| 2008 | 62 | 4,204 | 4,414 | -2.84% | 5193.11 | 26215 |
| 2009 | 63 | 4,338 | 4,555 | 43.27% | 7678.22 | 45237 |
| 2010 | 64 | 4,477 | 4,701 | 27.22% | 7036.55 | 64589 |
| 2011 | 65 | 4,621 | 4,852 | 18.65% | 6772.09 | 83405 |

Table 6: Present Value of Lost Retirement Benefits

| Year | Age | Pension Benefit | Value of SIP and SPP contributions | Annuity from SIP and SPP contributions | Social security benefits | Total pre-tax retirement income | Taxes | Total post-tax retirement income | Consumption from Pension | Net Loss from Pension | Present Value of Net Loss | Discount |
|------|-----|-----------------|------------------------------------|--|--------------------------|---------------------------------|-------|----------------------------------|--------------------------|-----------------------|---------------------------|----------|
| 2012 | 66 | 26080 | 263876 | 21990 | 16092 | 64162 | 13062 | 51099 | 12315 | 38784 | 38784 | 0 |
| 2013 | 67 | 26080 | 251562 | 22869 | 16092 | 65041 | 13741 | 51300 | 12363 | 38937 | 38937 | 0 |
| 2014 | 68 | 26080 | 237840 | 23784 | 16092 | 65956 | 14160 | 51796 | 12483 | 39313 | 39313 | 0 |
| 2015 | 69 | 26080 | 222619 | 24735 | 16092 | 66907 | 14596 | 52311 | 12607 | 39704 | 39704 | 0 |
| 2016 | 70 | 26080 | 205799 | 25725 | 16092 | 67897 | 15050 | 52847 | 12736 | 40111 | 40111 | 0 |
| 2017 | 71 | 26080 | 187277 | 26754 | 16092 | 68926 | 15521 | 53404 | 12870 | 40534 | 39739 | 1 |
| 2018 | 72 | 26080 | 166944 | 27824 | 16092 | 69996 | 16012 | 53984 | 13010 | 40974 | 39383 | 2 |
| 2019 | 73 | 26080 | 144685 | 28937 | 16092 | 71109 | 16522 | 54587 | 13155 | 41432 | 39042 | 3 |
| 2020 | 74 | 26080 | 120378 | 30094 | 16092 | 72266 | 17052 | 55214 | 13307 | 41908 | 38716 | 4 |
| 2021 | 75 | 26080 | 93895 | 31298 | 16092 | 73470 | 17604 | 55866 | 13464 | 42403 | 38405 | 5 |
| 2022 | 76 | 26080 | 65100 | 32550 | 16092 | 74722 | 18178 | 56545 | 13627 | 42917 | 38109 | 6 |
| 2023 | 77 | 26080 | 33852 | 33852 | 16092 | 76024 | 18178 | 57847 | 13941 | 43906 | 38222 | 7 |

Total loss from Retirement benefits

468466

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Dissertation Committee: Johannes Schmieder, Kevin Lang, David I. Levine

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RESEARCH EXPERIENCE

2013-2014: Research Assistant for Professors Carola Frydman, Claudia Olivetti and Daniele Paserman, Boston University

2009-2011: Research Assistant for Professors Laura Alfaro, Fritz Foley, and Michael Toffel, Harvard Business School

2007-2009: Senior Research Assistant for Dr. Martin Baily, The Brookings Institution

PUBLICATIONS

Levine, David I., Michael W. Toffel, and Matthew S. Johnson. 2012. "Randomized Government Safety Inspections Reduce Worker Injuries with No Detectable Job Loss." *Science* 336, no. 6083.

Baily, Martin N., Robert E. Litan and Matthew S. Johnson. 2008. "The Origins of the Financial Crisis." The Brookings Institution; Fixing Finance Series: Paper 3.

Johnson, Matthew S. 2007. "The Power of Ideas and American Racial Struggles in the Early Nineteenth Century." *Clio's Scroll: Berkeley Undergraduate History Journal* (spring).

WORKING PAPERS

"Regulation by Shaming: Deterrence Effects of Publicizing Violations of Workplace Safety Laws."

OTHER PUBLICATIONS

Harvard Business School (HBS) Teaching Materials

Foley, C. Fritz, Matthew S. Johnson. "The Export-Import Bank of the United States." HBS Case 211-032.

Foley, C. Fritz and Matthew S. Johnson. "Belco Global Foods." HBS Case 211-033.

Alfaro, Laura, and Matthew Johnson. "Foreign Direct Investment and Ireland's Tiger Economy (B)." HBS Supplement 710-057.

Foley, C. Fritz, Michael Chen, Matthew Johnson, Linnea Meyer. "Noble Group." HBS Case 210-021.

Book Chapters

Alfaro, Laura and Matthew Johnson. 2012. "Foreign Direct Investment and Growth." Chap. 20 in *The Evidence and Impact of Financial Globalization*, edited by Gerard Caprio, 299–307. Elsevier.

CONFERENCES AND PRESENTATIONS

2016: Strategy and the Business Environment Annual Conference

2015: Southern Economic Association Annual Meeting

2014: Society of Labor Economists (SOLE) Annual Meeting; Alliance for Research in Corporate Sustainability (ARCS) Annual Meeting; Washington University Economics Graduate Student Conference; White House Office of Science and Technology Policy

2013: Harvard School of Public Health ERC Seminar

2012: Association for Public Policy and Management Fall Research Conference, Baltimore MD

COMPUTER SKILLS: STATA, LaTeX, R

OTHER EXPERIENCE

2014-2015: BU Labor Reading Group founder/organizer; 2013-2014: BU Graduate Economics Association Officer; 2012-2015: Volunteer Tutor with Tutoring Plus! (2012-2015)

Barbara J. Arestegui

Karen A. Martin

Betty A. Ong

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July 27, 2016

Justin Green, Esq.
Kreindler & Kreindler, LLP
750 Third Avenue
New York, NY 10017

Re: 9/11/2001 Economic Loss Analyses for Barbara J. Aretegui, Karen A. Martin, and Betty A. Ong

Dear Mr. Green:

At your request, I analyzed the economic losses of the Estates of Barbara J. Aretegui, Karen A. Martin, and Betty A. Ong in the fall of 2005. This analysis involved estimating the economic value of Ms. Aretegui's, Ms. Martin's, and Ms. Ong's estates at their respective life expectancies, based on the following factors:

- (i) each woman's earnings capacity in September 2001, which ranged approximately from \$43,500 to \$47,500 per year,
- (ii) the date of their retirement, age 62 or age 67,
- (iii) the retirement income that they could have expected to receive from their union pension and from Social Security,
- (iv) their personal consumption expenses, which I estimated as approximately 63% to 70% of their earnings or their retirement income, and
- (v) that they could expect to receive an average rate of return on their savings or investments of 4.50% per year.

Barbara J. Aretegui was 38.89 years old when she died on September 11, 2001. In 2005, I estimated her life expectancy as 42.70 years and her expected date of death as 2044.39 at 81.59 years old. Karen A. Martin was 40.73 years old on September 11, 2001 and I estimated her life expectancy as 40.94 years, or to 2042.64 when she would have been 81.67 years old. Betty A. Ong was 45.60 years old on September 11, 2001. I estimated Ms. Ong's life expectancy as 36.16 years and her date of death as 2037.86 at the age of 81.76.

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In my 2005 analyses, I relied on the assumptions that are outlined above and my life expectancy estimates for Barbara J. Aretegui, Karen A. Martin, and Betty A. Ong to determine the economic value of their estates at the end of each woman's life as indicated in the following table. The economic values that appear in this table represent the estimated amount of Ms. Aretegui's, Ms. Martin's, and Ms. Ong's estate at the end of their lives. That is, these figures represent the amounts that would have been available for distribution in 2044 when Barbara J. Aretegui would have been expected to die, in 2042 upon Karen A. Martin's death, and at Betty A. Ong's life expectancy in 2037.

| Estate of | (Undiscounted) Dollar Value of Estate at Life Expectancy Assuming | |
|---------------------|--|--------------------------|
| | <u>Age 62 Retirement</u> | <u>Age 67 Retirement</u> |
| Barbara J. Aretegui | \$1,936,713 | \$2,366,810 |
| Karen A. Martin | \$1,982,074 | \$2,500,873 |
| Betty A. Ong | \$994,183 | \$1,404,482 |

You recently asked me to determine the present value of the (undiscounted) end-of-life estate estimates that I developed for Ms. Aretegui, Ms. Martin, and Ms. Ong in 2005. I have calculated the present value amounts by using the same interest rate, 4.50% per year, that I used in 2005 to estimate the rate of return that Barbara J. Aretegui, Karen A. Martin, and Betty A. Ong could have expected to receive on the assets (estate) that they would have accumulated from September 11, 2001 to the end of their lives.

According to the article "Net Accumulation to the Estate: Meaning and Measurement" (Frank Slesnick and Michael J. Piette, Journal of Forensic Economics, vol. 20, no. 3, 2007, pp. 227-250), it is appropriate in most economic loss of inheritance analyses to use a discount rate in the present value calculation that is equal to the individual's expected rate of return on their investments. Therefore, I have estimated the present value of Ms. Aretegui's, Ms. Martin's, and Ms. Ong's end-of-life estates on July 1, 2016 by using the formula that appears below and a discount/interest rate of 4.50% per year.

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PV (Estate at Life Expectancy) = Dollar Value of Estate / 1.045[^] (Life Expectancy - 2016.50)

| Estate of | July 1, 2016 Present Value of Estate at Life Expectancy Assuming | |
|---------------------|---|--------------------------|
| | <u>Age 62 Retirement</u> | <u>Age 67 Retirement</u> |
| Barbara J. Aretegui | \$567,317 | \$693,304 |
| Karen A. Martin | \$627,288 | \$791,478 |
| Betty A. Ong | \$388,306 | \$548,559 |

As the figures in the preceding table indicate, I have estimated the present value of Barbara J. Aretegui's estate as \$567,317 to \$693,304, the present value of Karen A. Martin's estate as \$627,288 to \$791,478, and the present value of the estate of Betty A. Ong as \$388,306 to \$548,559 to a reasonable degree of economic certainty.

If you have any questions, please call me at 212.521.8100

Sincerely yours,

Leonard R. Freifelder, Ph.D.